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SECTION VII.—WEATHER AND DATA FOR THE MONTH.

THE WEATHER OF APRIL, 1917.

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PRESSURE AND WINDS.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing direction of the winds are graphically shown on Chart VII, while the average values for April, 1917, at the several stations, with the departures from the normal, are shown in Tables I and III.

At the beginning of the month relatively low pressure prevailed from New England and the lower Lakes Region southwestward to the west Gulf States; elsewhere it was generally above the normal, being decidedly high in the southeast, in the Great Plains States and to the westward. During the first half of the month a number of rather extensive low-pressure areas moved from the southwest, eastward or northeastward across the country. While they were followed by relatively high-pressure areas yet in most central and southern districts the pressure during this period was generally below the average, except for a few days early in the month and again about the end of the first decade when rather extensive HIGHS moved over those sections. In the northern portion of the country, as well as west of the Rocky Mountains, with the exception of the passage of an occasional LOW, the pressure was generally above the average during the above period.

During the latter half of the month a number of rather extensive low and high pressure areas moved rather slowly across the country, but the pressure average was below normal in the South, while in most central and northern districts it was above the average much of the time.

The month closed with the pressure below the normal in practically all sections, except the extreme north-eastern Canadian Provinces, the Rocky Mountains region, and along the South Pacific coast, where it was normal or slightly above.

For April as a whole, the barometric pressure averaged below the normal east of the Mississippi River, except in the upper Lakes Region; it was also relatively low in Missouri, Arkansas, most of Texas, and west of the Rocky Mountains generally, except in central and southern California. Elsewhere it was above the average. The departures from the normal were generally small except in the northwestern Canadian Provinces where rather pronounced positive departures occurred.

The distribution of the HIGHS and LOWS was generally favorable for northerly winds in the northern half of the country east of the Rocky Mountains, while southward the winds were most frequently from southerly points. West of the Rocky Mountains variable winds prevailed.

TEMPERATURE.

The temperature for the first decade of April was much lower than the normal in nearly all the eastern part of the country and frosts occurred as far south as central Mississippi and central South Carolina; but it was slightly warmer than the average in the upper Missouri Valley, over most of California, Nevada, and

Arizona, and in the central portions of Oregon and Washington. Freezing temperature extended as far south as the northern portion of North Carolina, Tennessee, and northern Texas, while in northern Maine and parts of the central Rocky Mountain district temperatures fell as low as 10° F. From April 11 to 16 unusually cool weather prevailed in nearly all sections, with widespread frost as far south as the northern portions of the east Gulf States. However, on the 17th the weather became warmer in the central valleys and to the southwest, and during the next few days warmer weather obtained in most eastern districts, the temperature over the interior districts being much above normal. In Arizona and portions of adjacent States it continued unseasonably cold.

About the 20th cooler weather with frosts appeared in Kansas, Oklahoma, and Texas, and by the 23d low temperatures for April prevailed in the Lakes Region and upper Mississippi Valley; but in most of the central and southern districts east of the Rocky Mountains it was warmer than usual for the season. West of the Rocky Mountains cool weather continued except in portions of California and Oregon. During the latter part of the month the temperature averaged below the normal over practically the whole country, except in the cotton belt, the southern and central Appalachian region, central and northern California, and southwestern Oregon.

April closed with low temperatures—for the season—in practically all the principal grain-growing areas, and in the western and north-central portions of the cotton belt.

For the month as a whole the temperature was below the normal throughout the country, except south of Pennsylvania and the Ohio River and locally in Texas and California where the month was somewhat warmer than usual. The minus departures averaged from 3 to 6 degrees a day over the upper Mississippi Valley, the northern and central portions of the Great Plains, and the Rocky Mountains and Plateau States.

PRECIPITATION.

Plentiful precipitation occurred during the first 10 days of April in northern California, western Oregon, and most of Washington; but generally there was no rain in the vicinity of the Mexican boundary and the southern Plains Region. Heavy rain fell in Missouri and the Ohio Valley States and southward to the Gulf, and also in central and northern Georgia, and portions of the Carolinas. Moderate rainfall occurred in Iowa, southern Georgia, western Florida, and in the eastern portions of Texas, Oklahoma, Kansas, and Nebraska, as well as in the Middle Atlantic and New England States.

During the second decade there was little rain in the eastern part of the country north of the Ohio River and Maryland, but moderate falls occurred in portions of the Carolinas and Georgia, and generous amounts were received in the southern part of Florida. Most of Louisiana and Missouri had considerable rain, while in the Plains States there were moderate amounts over large areas. In Texas showers failed to reach many of the southern and western counties, but much of that State

received considerable moisture, as did nearly all of Oklahoma and Kansas, where the drought was well broken. From the Rocky Mountains westward the distribution of precipitation was irregular. In portions of Nevada and Arizona, southern California, and Colorado, there were good rains, and in nearly all of Idaho and Oregon with portions of the States adjoining, precipitation was heavy.

The rainfall during the third decade was heavy in the lower Missouri and middle Mississippi Valleys, and in north-central Texas. In general there was moderate rainfall in the Ohio Valley and Lakes Region, most of the Plains States, in the central Rocky Mountains district and portions of the far Northwest, but practically no rain fell in southern and western Texas and to the westward.

For April as a whole the precipitation was heavy along the northern Pacific coast, in the north-central portions of Arizona, and generally in the Ohio, central, and lower Mississippi, and lower Missouri valleys, and in the eastern portions of the Plains States. Elsewhere the amounts were moderate to small, with little or no rainfall in extreme western Texas and the southern portions of New Mexico and Arizona.

RELATIVE HUMIDITY.

The relative humidity for April as a whole was generally above the normal in the northern and western portions of the country except in California, where it was mostly below the average. The relative humidity was less than usual for April in the southern half of the country from the Great Plains eastward, except in relatively small areas over the South Atlantic and Central Gulf States.

GENERAL SUMMARY.

Farm work was delayed by the cold and wet weather in most northern districts, and in the Southwest and Southeast the dry weather retarded plowing and seeding, but favorable progress was made during the middle and latter parts of the month in the more central districts. However, vegetation was generally backward.

As a whole, the weather was favorable for winter wheat in the principal wheat-growing districts, except in portions of Oklahoma and Texas, where the moisture was insufficient. The seeding of spring wheat made good progress, but was somewhat delayed in Montana and North Dakota, due to unfavorable weather conditions; and the seeding of rye, oats, and barley progressed favorably in most districts. The planting of cotton and corn, while somewhat delayed, made good progress under the more favorable weather conditions during the latter half of the month. Potatoes and truck crops, although somewhat retarded in the north by the cold weather, made good progress in most sections. All reports indicate a decided increase in most truck crops and potatoes. Pastures and ranges were late and short in most sections and dry feed was scarce, resulting in live stock being in unusually poor condition, with considerable loss in some districts. The weather was generally favorable for most fruits, which, at the close of the month, were in excellent condition. Peaches were extensively winter-killed.

SEVERE LOCAL STORMS.

The following notes of severe storms have been extracted from reports by officials of the Weather Bureau:

Florida.—On the afternoon of April 5, 1917, a severe storm, with decided tornadic characteristics, occurred at

Seffner and other points adjacent to Tampa. A child was killed and a number of houses were blown down and trees uprooted. Estimated velocity of wind at Seddon Island, 90 miles an hour. (See above, p. 167.)

A severe thunderstorm, with heavy rain and hail, occurred at Miami on the 13th. The storm had some characteristics of the tornado. In its path a school building was demolished and a number of houses unroofed. About 300 grapefruit trees were uprooted, some of which had survived several hurricanes. The damage to property amounted to \$6,000 or \$8,000.

Tennessee.—A severe local storm swept over Binghamton, a suburb of Memphis, about noon on April 1, 1917, damaging considerable property. Trees and telephone poles were blown down, a number of houses were unroofed, and two churches were badly wrecked, in one of which three persons were injured. The property loss was estimated at \$200,000. A small boat crossing the Mississippi River was capsized by the wind, resulting in the drowning of two persons. A heavy rain and wind-storm at Union City on the same day damaged a number of buildings and flooded hundreds of acres of land. During the afternoon of the 29th a wind and electric storm at Jefferson City destroyed some timber and fruit trees and killed one man. The town of Dresden suffered to the extent of several thousands dollars in minor losses from a rapidly moving storm of but a few minutes' duration about 4 p. m. of the 30th. It came from the northwest and cut a path about 100 yards wide and 1½ miles long. Only one person was reported injured.

Texas.—About 4 p. m. on April 11, 1917, a severe storm moved over Austin, accompanied by very heavy hail, some of the stones weighing between 2 and 3 ounces. The hail continued less than 5 minutes, but its depth on the ground was about 3 inches. Truck gardens, fruit, windows, greenhouses, automobile tops, and some shingle and tin roofs were badly damaged. The estimated loss was \$50,000.

Average accumulated departures for April, 1917.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
New England.....	41.8	-1.7	-4.7	2.67	-0.40	-1.60	6.3	+0.7	75	+1
Middle Atlantic.....	51.3	+0.6	+1.4	2.12	-1.00	-1.70	5.3	-0.9	66	-2
South Atlantic.....	64.1	+3.0	+9.0	2.83	-0.60	-3.40	3.5	-0.7	68	-3
Florida Peninsula.....	73.2	-0.6	+4.8	2.15	+0.30	-3.60	3.4	-0.3	71	-3
East Gulf.....	65.3	+0.7	+9.1	3.70	-0.40	+1.10	4.0	-1.0	68	-4
West Gulf.....	64.6	-1.1	+6.5	2.92	-0.60	-4.90	4.6	-0.5	68	-5
Ohio Valley and Tennessee.....	54.2	-0.4	+0.3	3.76	+0.20	+2.20	5.7	+0.3	65	-1
Lower Lakes.....	49.3	-1.9	-5.9	3.00	+0.70	-0.30	6.7	+0.9	73	+2
Upper Lakes.....	38.2	-2.6	-11.7	2.74	+0.40	-1.00	6.2	+0.5	76	+3
North Dakota.....	37.6	-3.0	-10.1	1.61	-0.20	-0.60	6.4	+1.2	72	+5
Upper Mississippi Valley.....	47.8	-2.7	-7.1	3.90	+0.90	-0.20	6.5	+1.2	70	+2
Missouri Valley.....	47.9	-2.6	-0.4	3.96	+1.10	+0.30	6.3	+1.0	70	+6
Northern slope.....	38.9	-3.9	-13.3	1.98	+0.40	+0.30	6.5	+1.4	67	+7
Middle slope.....	50.8	-2.9	+0.6	1.80	-0.40	-1.00	5.5	+0.8	60	+2
Southern slope.....	61.7	-0.7	+4.8	1.33	-0.60	-2.10	2.5	-1.9	42	-11
Southern Plateau.....	55.3	-2.5	-11.1	0.36	0.00	-0.60	2.6	-0.2	39	+5
Middle Plateau.....	44.8	-3.8	-27.0	1.07	-0.10	-1.20	5.1	+1.0	50	+2
Northern Plateau.....	44.9	-4.2	-17.1	2.46	+1.10	-0.20	7.4	+2.1	63	+7
North Pacific.....	47.0	-2.6	-9.3	5.97	+0.50	-3.60	7.7	+1.5	82	+6
Middle Pacific.....	58.3	-0.9	-7.3	1.20	-0.90	-5.10	3.7	-0.5	67	-3
South Pacific.....	57.4	-0.5	-3.9	0.46	-0.60	-1.90	3.3	-0.5	67	-2